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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/636,023	08/07/2003	Kuo-Yuin Li	LELI 3493	1020
321	7590	11/03/2004	EXAMINER	
SENNIGER POWERS LEAVITT AND ROEDEL ONE METROPOLITAN SQUARE 16TH FLOOR ST LOUIS, MO 63102			NGUYEN, THANH NHAN P	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/636,023

Applicant(s)

LI, KUO-YUIN

Examiner

(Nancy) Thanh-Nhan P Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito U.S. Patent Application Publication No. 2001/0028412 in view of Davis et al U.S. Patent No. 5,822,029.

Referring to claim 1, Ito discloses a projection illumination device, comprising a light source (11, and 14) providing parallel light beam along a light axis; and a wire grid polarizer (40B) substantially perpendicular to the light axis, [see fig. 7].

Ito lacks of disclosing a quarter-wave retardation being disposed near the light source, and substantially perpendicularly to the light source; and the quarter-wave retardation being parallel with the wire grid polarizer.

Davis et al discloses the quarter-wave retardation (38) being disposed near light source, and being parallel to the filter (18), which functions as the wire grid polarizer for light recycling, [see fig. 5, and col. 5, lines 11-15], for the benefit of reducing the amount of light lost. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have a wire grid polarizer being disposed parallel to the quarter-wave retardation, and

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for being associated with the quarter-wave retardation to polarize the light beams from the light source for the benefit of reducing the amount of light lost.

Referring to claim 2, it was well known that adhering layers together was to prevent Newton's rings. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the quarter-wave retardation adheres to the illuminated surface of the wire grid polarizer for the benefit of preventing Newton's rings.

Referring to claim 4, Ito discloses the projection device, further comprising a lens array (220) disposed between the light source and the quarter-wave retardation and being substantially perpendicularly to the light axis, thereby preliminarily unifying the light beams from the light source, [see fig. 7].

Referring to claim 5, to get 90 degree rotation for light recycling, the quarter-wave retardation has a slow axis, the wire grid polarizer has an absorption axis, of which the slow axis and the absorption axis define an included angle of substantially 45 degrees is required. Therefore, it would have been obvious to a person of ordinary skill in the art to have the slow axis of the quarter-wave retardation, and the absorption axis of the wire grid polarizer define an included angle of substantially 45 degree for the benefit of improving the efficiency of the liquid crystal display.

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Referring to claim 6, Ito discloses wherein the light source further comprising a lamp (11) and a parabolic lampshade (14), of which the lamp is disposed at the focus of the parabolic surface of the lampshade for providing the parallel light beams, [see fig. 7].

Referring to claim 7, Ito discloses the projection illumination device, further comprising a condenser (224), and a relay (39), the condenser is used for unifying a shape of the light beams, and the relay is used for concentrating and collimating the light beams, [see fig. 7].

Referring to claim 8, Ito discloses an LCD projection system, comprising a projection illumination device as claimed in Claim 1 for providing polarized light, [met claim 1 rejection]; and an imaging apparatus for receiving the polarized light from the projection illumination device in order to project an image, [see fig. 7].

Referring to claim 9, Ito discloses the LCD projection system, wherein the imaging apparatus comprising a color selector (color separation 100), two liquid crystal panels and a lens (90), of which the color selector is adapted for selecting the desired color and its complementary color, and the two liquid crystal panels are adapted for producing the image and projecting the image through the lens, [see fig. 7, and 24].

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Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Davis et al as discussed above, and further in view of Yamagishi U.S. Patent No. 5,777,695.

Referring to claim 3, Ito lacks of disclosing the projection illumination device, further comprising a transparent glass plate that adheres to the quarter-wave retardation.

Yamagishi discloses the projection illumination device comprising a transparent glass plate (28) that adheres to the quarter-wave retardation (29), [see fig. 7], for the benefit of improving the light utilization efficiency, [see col. 11, lines 45-46].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ito U.S. Patent Application Publication No. 2001/0028412 discloses the projection illumination device comprising a light source providing parallel light beams along a light axis; and a wire grid polarizer being substantially perpendicularly to the light axis.

Davis et al U.S. Patent No. 5,822,029 discloses the quarter-wave retardation being parallel to the filter, which functions as the wire grid polarizer.

Yamagishi U.S. Patent No. 5,777,695 discloses the quarter-wave retardation adhering to the transparent glass plate.

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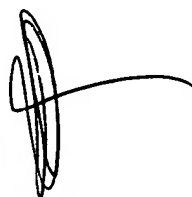
Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on M-F/9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
Art Unit 2871

TN



KENNETH PARKER
PRIMARY EXAMINER